

surprised that the wonderful plume-brush on the second or middle pair of legs does not seem to have been noticed before. It is not only a fine plume of fawn-coloured hairs but it has a silk-like case or purse attached to the tibia, into which it can be neatly packed away. For this reason perhaps it has escaped notice, and it is also hidden away under the forewing close to the body. The male of *Leucania litoralis* has a similar scent-brush on the under hind-part of the body. Other common native species as *P. gamma* and *P. meticulousa* have prominent hair-tufts, either on the body or on the thorax.

Amongst the Geometrae the male of the two small moths, *Lobophora secalata* and *L. halterata* (the Seraphim), have a large, oblong, fringed, snowy-white lobe or pocket at the base of the hindwing (covered in repose), giving the appearance of an extra wing.

*Scotosia retulata* and *S. rhamnata* (Brown Scallop and Dark Umber) have an extraordinary large trifid tuft, terminating the body of the male, to which Haworth drew special attention. The two species of the *Hepialidae*, *humuli* and *hectus* have the hind leg of the male aborted, forming a scent gland. In some of these cases we do not know the function of these special organs and when they are for the diffusion of scent why are they present in these particular cases?

When closely allied species from abroad are examined it is found that similar yet more elaborate organs are present.

There is then a wide field here for investigation. "As yet an unexplored and promising harvest of new and interesting facts," Müller said over sixty years ago.

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#### EXPLANATION OF FIGURES ON PLATE.

1. Wing of *Pterostoma palpina* showing sense-organ and section enlarged.
  2. *Lophopteryx camelina* at rest, showing position of sense-organ, natural size.
  3. Middle leg of male *Habrosyne derasa* with scent brush and silk-like container  $\times 5$ , back and front.
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### THE GENETICS OF RHYACIA RUBI, VIEW., AB. OCHRACEA, WALKER, AND AB. FLAVA, WALKER.

By E. A. COCKAYNE, D.M., F.R.C.P., F.R.E.S.

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Walker's notes on the breeding of these rare forms published in the *Entomologist's Record*, 1902, 14, 171, and 1903, 15, 55, are scanty, but sufficient to make it almost certain that the yellow forms are recessive to the red. The results may be condensed as follows:—

- (1) Unknown male (? DR)  $\times$  *ochracea* female (RR)—Progeny *ochracea* 25 per cent., *flava* 14 per cent. All yellow forms 39 per cent. Red forms, *quadratum*, Hb. and typical, in approximately equal numbers, 61 per cent.
- (2) From this brood a male *flava*  $\times$  a female *ochracea* gave 9 yellow offspring in the same year, 3 *flava* and 6 *ochracea*. The rest of the brood, which passed the winter as larvae, produced yellow forms

only, but neither the numbers nor the proportion of *flava* to *ochracea* are given.

- (3) Unknown male (? DD)  $\times$  yellow female—Progeny all red forms. Numbers not given.

The results are best explained by assuming that red forms are dominant to yellow, the former being DD, homozygous red, and DR, heterozygous red, and the latter RR, homozygous yellow forms. If so, the three most important pairings were obtained, that between two heterozygotes being the only one lacking.

(1) DR  $\times$  RR. This should give equal numbers of red and yellow forms. Unless 14 is a misprint for 24 per cent., there is an excess of red forms and a deficiency of yellow ones, the deficiency being in ab. *flava*. Unfortunately the numbers are not given.

If my supposition is correct and the unknown male was heterozygous for yellow, it was extremely fortunate that it paired with the yellow female which Mr Walker captured and bred from.

(2) RR  $\times$  RR. The expectation is that all the offspring will be yellow, and agrees with the actual result.

(3) DD  $\times$  RR. The offspring will be all DR, apparently normal red forms, and this result was obtained.

Walker claims that there are two distinct yellow forms, *flava* and *ochracea*, but it is probable that the yellow coloration is determined by a single gene and that *flava* and *ochracea* differ because of the action of one or more independent genes. Possibly *flava* is the yellow form of ab. *quadratum*, Hb. and *ochracea* of the typical red form. That equal numbers of *quadratum* and typical red specimens occurred in brood (1) is in favour of this explanation.

*Noctua (Rhyacia) castanea*, Esp., ab. *xanthe*, Woodforde, appears to be a parallel aberration. Like the yellow forms of *R. rubi*, which have only been recorded from Askham Bog near York, it is very local and, according to Barrett, is only known from the neighbourhood of Market Drayton. Although it is dangerous to assume that its relationship to the typical form is similar to that of the yellow forms of *R. rubi*, this is probably the case.

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## MORE NOTES\* ON ERIOGASTER PHILIPPSI, BART.

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Plate III.

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### PART I. ADDENDA AND CORRIGENDA.

THE EGG.—The eggs are not necessarily deposited in a ring, and extended observations may eventually prove that the ring of ova belongs to some moth other than *E. philippsi*.

THE LARVA.—The larvae of this moth bear on their bodies hairs capable of causing irritation upon contact with the skin. And even the manipulation of the cast skins and the dry powdered excreta in the

\*Previous notes on this insect appeared in *Ent. Rec.*, Vol. lii, June-July 1940.